

## 4 GENERIC COST ESTIMATING TOOL

Table 4-1 presents a generic cost estimating tools that can serve as a conceptual planning tool for local jurisdictions to estimate the costs of pedestrian improvements. The generic template is designed to be interactive; cities and counties can use the Excel spreadsheet to input local information about quantities of desired facilities and get a ballpark budget for a set of pedestrian improvements. The template is a menu of commonly uses items and their approximate costs; final cost estimates for real capital projects should be prepared by trained engineers. It is also important to note that there may be economies of scale achieved when installing multiple pedestrian improvements at one time. The template does not reflect these savings.

A description of each column contained in Table 4-1, the cost estimating tool, is below.

### *A. Item Description*

The pedestrian facilities are listed alphabetically in the description column. They are divided into two categories: pedestrian infrastructure and pedestrian amenities. Items in the infrastructure section include the core facilities, or “building blocks” of a safe and healthy pedestrian district. This category includes sidewalks, crosswalks, roadway medians, traffic signals and bulb-outs. Facilities in the pedestrian amenities section include items that improve the overall comfort and appearance of the pedestrian environment. Examples of amenities include benches, trees and street pole banners. While it is beyond the scope of this project to prepare a detailed description of each pedestrian facility listed in the template, many resources exist that describe these items, including MTC’s Bicycle and Pedestrian Safety Toolbox, many local pedestrian plans and websites such as [walkinginfo.org](http://walkinginfo.org).

### *B. Quantity and Unit*

These columns allow the user to input a number of units of a specific facility to generate a total cost. The unit choices are:

- ◆ Square Feet (SF) for items that cover a large area such as concrete paving for sidewalks or asphalt.
- ◆ Linear Foot (LF) for facilities that need to be measured in a line rather than by total area. A linear foot measurement would apply to curb and gutter, a roadway median or seat walls.
- ◆ Each (EA) for items where there is an individual cost per item but there may be many of one item needed, such as signs, traffic circles, wheelchair ramps or amenities such as benches, bike racks and information kiosks.
- ◆ Lump Sum (LS) for items where one lump sum applies to the entire cost of implementing or constructing the item, such as the required 60-day maintenance for new trees.

### *C. Low and High Unit Costs*

The next two columns provide 2005 high and low costs for each item on the template. The range allows for variances in the quality and brand of an item. The low cost typically applies to a “no-frills” version of an item. The high cost applies to items that often require some amount of original design, such as gateway features or a pedestrian bridge. These types of items typically have the biggest range in costs, as do traffic signals, which can vary greatly in their size, capabilities and structural integrity. The range in price also ensures that the template will be used for conceptual budgeting only and not exact pricing of real capital projects. In some cases the cost is the same in the high and low column because no range in price (or in quality) exists for the item. All costs assume demolition (if necessary) and installation costs.

The costs contained in the template are based on DC&E’s own design and cost estimating work for streetscape projects throughout the Bay Area, which is informed by the *RS Means Site Work and Landscape Cost Data*. The cost estimates were also cross-referenced with costs contained in MTC’s Pedestrian and Bicycle Safety Toolbox and with individual cities, including the City of Oakland. In addition, before the total cost is calculated on the last page, the

template adds a 10 percent mobilization fee, a 20 percent contingency fee and a 15 percent planning and design fee, which are all based on industry standards.

The next two columns, Low Price and High Price, merely calculate a total cost for the items based on the unit count inputted into the template.

#### *D. High and Low Cost Subtotals*

These columns provide separate subtotals for the pedestrian infrastructure costs and the pedestrian amenities costs.

#### *E. Effectiveness*

This column provides a normative assessment of the effectiveness of each pedestrian facility on a high/medium/low scale. The rating is inherently qualitative. A high effective rating means that the facility has strong value related to safety, access, aesthetics and cost. The facility promotes walkability, induces people to walk, improves safety or creates an attractive pedestrian environment. A highly effective facility achieves these things in the most cost effective way possible. Core pedestrian infrastructure such as sidewalks, traffic signals, and pedestrian lights are all considered “high.” The effectiveness of other facilities are considered relative to these essential items.

A limitation of the template is that it does not capture the idea that the effectiveness of an individual facility is typically greater when it is installed in combination with other pedestrian improvements. For example, a crosswalk is made more effective when it is implemented with stop back lines and stop signs to ensure that vehicles come to a stop. Similarly, stop signs are more effective when they abut a stop back line and a crosswalk because then the driver anticipates the pedestrians. In addition, it is important to note that other elements in the built environment, such as the mix of land uses, residential densities, and transit access are just as important in creating good pedes-

trian environment as the pedestrian facilities included in the cost estimate template.

*F. Notes and Assumptions*

This column includes any notes or assumptions necessary to help explain or clarify the cost estimate for an individual item.

Table 4-1:  
**COST ESTIMATING TEMPLATE**

For Planning Purposes Only

Item	Description	Qty.	Unit	Low Unit \$	High Unit \$	Low Price	High Price	Low Subtotal	High Subtotal	Effectiveness	Notes & Assumptions <sup>1,2</sup>
<b>Pedestrian Infrastructure</b>											
<b>Crossings</b>											
1.0	Audible Pedestrian Crossing Cues at Intersection		LS	\$10,400	\$10,400	\$0	\$0			⊖	Per intersection. Assumes one at each corner of intersection (8 per intersection or \$10,400 per intersection)
1.1	Automatic Pedestrian Detection		EA	\$500	\$1,000	\$0	\$0			⊖	A surface treatment that senses the weight of pedestrian
1.2	Bulbout (LF curb, sf Concrete, wheelchair access, demo)		EA	\$15,000.00	\$25,000.00	\$0	\$0			●	Costs increases with infrastructure implications. Based on lump sum cost for 6' wide bulbout extension, and 20' length
1.3	Crosswalk Countdowns		LS	\$2,400	\$6,400	\$0	\$0			●	Per intersection (assumes 8 signals). Cost is \$300 - \$800 for one countdown signal
1.4	Crosswalk: Lighted Flashing (In Pavement Flashers)		LS	\$100,000	\$120,000	\$0	\$0			⊖	Lights adhered to pavement in crosswalk. Per intersection.
1.5	Crosswalk: Raised above grade		EA	\$5,000	\$5,000	\$0	\$0			⊖	
1.6	Crosswalk: Striping (Standard and High Visibility)		LF	\$3	\$6	\$0	\$0			⊖	Low end: standard and zebra stripping; High end: high visibility fluorescent
1.7	Pedestrian Push Button Treatments		EA	\$1,300	\$1,300	\$0	\$0			⊖	
1.8	Pedestrian Refuge Island		EA	\$8,000	\$15,000	\$0	\$0			⊖	Assumes curb and median approximately 6' wide
1.9	Signage (Standard vs. High Visibility)		EA	\$300	\$400	\$0	\$0			●	Assumes new post is needed in sidewalk and installation
1.10	Signalized Intersections		LS	\$125,000	\$250,000	\$0	\$0			●	Per intersection. Estimate depends on size of street, type of signal and complexity of intersection
1.11	Wheelchair Ramps (w/ warning surface half domes)		EA	\$2,600	\$3,000	\$0	\$0			●	Includes demolition costs and repaving asphalt at cuts
1.12	Yield Lines (Advanced Limit Lines or Back Lines)		LS	\$200	\$500	\$0	\$0			●	Per intersection
<b>Enforcement</b>											
1.13	Radar Speed Display Sign		EA	\$13,000	\$16,000	\$0	\$0			●	
1.14	Rat Box		LS	\$400	\$400	\$0	\$0			⊖	Per intersection. Rat box indicates when signal has changed. Requires 4 per intersection(or \$100 each)
1.15	Traffic Cameras		LS	\$75,000	\$125,000	\$0	\$0			●	Infrared cameras that photograph autos running redlights. Per intersection.
<b>Materials</b>											
1.16	Asphaltic Concrete		SF	\$9	\$9	\$0	\$0			○	Roadway asphalt
1.17	Concrete Paving Sidewalk (scored)		SF	\$8	\$10	\$0	\$0			●	Square foot cost of concrete for interior of sidewalk only
<b>Sidewalks and Lighting</b>											
1.18	Concrete Curb and Gutter Installation		LF	\$30	\$40	\$0	\$0			●	
1.19	Concrete Curb and Gutter Remove and Replace		LF	\$60	\$60	\$0	\$0			●	
1.20	Concrete Sidewalks Removal and Replacement		SF	\$20	\$20	\$0	\$0			●	Crosswalk includes concrete treatment
1.21	Pedestrian-Level Street Lights		EA	\$3,000	\$5,000	\$0	\$0			●	
1.22	Standard Street Light (Cobra Head)		EA	\$10,000	\$10,000	\$0	\$0			○	
1.23	Widened Sidewalks		LF	\$80	\$80	\$0	\$0			●	Includes demolition cost for curb removal, replacement and concrete for 3 SF of sidewalk
<b>Traffic Calming</b>											
1.24	Chicanes		LS	\$15,000	\$35,000	\$0	\$0			●	A significantly bermed median between two lanes of traffic
1.25	Speedbumps		EA	\$3,000	\$4,500	\$0	\$0			●	
1.26	Stop Signs		EA	\$300	\$300	\$0	\$0			⊖	Including new post and cost of installation
1.27	Traffic Calming Circles		EA	\$8,000	\$12,000	\$0	\$0			●	Small circle barrier in typical intersection and landscaped
<b>Pedestrian Amenities</b>											
2.0	24" Box Trees		EA	\$1,820	\$1,820	\$0	\$0			●	Includes irrigation, trenching and water barrier
2.1	60 Day Maintenance		LS	\$3,000	\$4,000	\$0	\$0			⊖	Estimate based on square footage of landscape area and tree maintenance of costs over 1/2 mile of road
2.2	Bench (6' Wide)		EA	\$1,500	\$3,000	\$0	\$0			⊖	
2.3	Bike Racks		EA	\$600	\$1,200	\$0	\$0			⊖	Includes installation
2.4	Bollards		EA	\$500	\$750	\$0	\$0			⊖	
2.5	Bus Shelter		EA	\$5,000	\$10,000	\$0	\$0			●	

<sup>1</sup> Cost Estimates based on 2005 prices.

<sup>2</sup> All items listed include installation costs.

SF: Square Foot  
EA: Each

LS: Lump Sum  
LF: Linear Foot

●	High
⊖	Medium
○	Low

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For Planning Purposes Only

Item	Description	Qty.	Unit	Low Unit \$	High Unit \$	Low Price	High Price	Low Subtotal	High Subtotal	Effectiveness	Notes & Assumptions <sup>1,2</sup>
<b>Pedestrian Amenities (con't)</b>											
2.6	Bus Concrete Pad		EA	\$6,500	\$6,500	\$0	\$0			○	
2.7	Crosswalk: Permeable Paving- Brick		SF	\$13	\$13	\$0	\$0			○	Includes demo of existing asphaltic concrete and aggregate base
2.8	Crosswalk: Scored Concrete		SF	\$8	\$12	\$0	\$0			○	Includes demo of existing asphaltic concrete and aggregate base
2.9	Crosswalk: Stamped Colored Concrete		SF	\$10	\$15	\$0	\$0			○	Includes demo of existing asphaltic concrete and aggregate base
2.10	Gateway Features		EA	\$12,000	\$24,000	\$0	\$0			●	
2.11	Grade Separated Crossing (Pedestrian Bridge)		EA	\$500,000	\$4,000,000	\$0	\$0			○	Costs increases with size and approach of crossing
2.12	Information Kiosks		EA	\$1,500	\$3,000	\$0	\$0			⊖	
2.13	Landscaped Median		LF	\$200	\$400	\$0	\$0			⊖	
2.14	Newsracks		EA	\$4,000	\$6,000	\$0	\$0			○	Includes a bank of 4-6 newspaper racks.
2.15	Orange Safety Flags at Corner Intersections		EA	\$100	\$100	\$0	\$0			○	Per set for one side of street; 8 sets required for complete set.
2.16	Planting at Bulb-outs		SF	\$9	\$9	\$0	\$0			⊖	
2.17	Seat Wall		LF	\$185	\$225	\$0	\$0			○	
2.18	Street Pole Banners		EA	\$400	\$600	\$0	\$0			⊖	Assumes standard street light pole already installed cost includes brackets and 2 banners.
2.19	Trash Cans		EA	\$800	\$1,500	\$0	\$0			○	
2.20	Tree Grates includes frame (4'x4')		EA	\$680	\$750	\$0	\$0			⊖	
2.21	Tree Guards (Powder Coated)		EA	\$325	\$670	\$0	\$0			○	
2.22	Tree Well		EA	\$500	\$500	\$0	\$0			●	Includes saw cut of 5' x5' hole, 2.5 cy amended soil, and concrete demo and hauling
2.23	Water Fountain		EA	\$15,000	\$50,000	\$0	\$0			○	Assumes water source is already available at site.
								Subtotals:	\$0	\$0	
								10% Mobilization cost:	\$0	\$0	
								20% Contingency:	\$0	\$0	
								15% Design Fee:	\$0	\$0	
<b>TOTAL ANTICIPATED COST</b>									\$0	\$0	

<sup>1</sup> Cost Estimates based on 2005 prices.

<sup>2</sup> All items listed include installation costs.

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